

# Wind Power Protection and Control Solutions

Protective Relay Panels & Control  
Houses for *Wind Energy*  
Substations



# Relay Panels and Control Houses for Wind Energy Substations

## Carter & Crawley's Legacy of Quality

With over 40 years of relay and control panel experience, Carter & Crawley provides a full range of services for wind energy Collector and Interconnect substations. From engineering to fabrication, wiring and testing we offer an integrated relay and control solution.



## Rapid Design, fabrication, testing and delivery

Tight schedules require robust project management and familiarity with wind power generation projects. Carter & Crawley provides a full range of services that coordinate protective relay and control house systems and services.

- Protective relay panels
- Interconnect wiring
- Control houses
- Marshalling cabinets
- Battery systems
- Eyewash
- Gas detection
- Lighting & security



## Engineering

Offering a comprehensive array of engineering services, Carter & Crawley provides electrical engineering and design for wind generation substations. From detailed design, including schematics, point-to-point drawings and wiring diagrams, these additional engineering resources will help keep your project on track.



## Field Services

The experienced Carter & Crawley Field Services Group offers a turn key, systems approach with a single point of contact and full responsibility for the integration of your system. We are familiar with collector substations and the demand for accurate interconnect wiring and functional testing. To support your project, our technicians are also available to assist with and start-up in the field.



## Delivery and Installation

Carter and Crawley can transport, offload and set your control building, anchoring it to the foundation on site. We include the interstate permits required for transportation and work alongside your team to coordinate installation. When buildings with multiple sections are provided, our qualified teams can put it all together and warranty the results.





## Custom, Turn-Key Control Buildings Delivered to Site

### Typical Designs

You can select the options you need from a standardized design, based on our extensive experience. If an entirely customized solution is required, we also provide engineering assistance to help with the detailed design specific to your project.

## Standard 3 or 6 Relay Panel Substation Control Building

### 3 Panel Design : Typical Bill of Material

Building Size 12' Wide x 24' Long x 12' 6" High  
 Panels :  
 3 Substation Protection & Control Switchboard Panels  
 Battery System, Charger & Battery Rack  
 Ventilation System  
 DC Panelboards  
 Disconnect Switches  
 200-Amp Automatic Transfer Switch  
 AC Panelboards  
 HVAC  
 Cables between AC, DC panels and protection panels  
 Marshalling Cabinets, including cable & connections  
 Fire Extinguisher, Table & Chair, Eyewash Fountain



### 6 Panel Design : Typical Bill of Material

Building Size 14' Wide x 28' Long x 12' 6" High  
 Panels :  
 3 Feeder panels  
 1 Capacitor bank panel  
 1 main breaker panel  
 1 transformer relay panel  
 Battery System, Charger & Battery Rack  
 Ventilation System  
 DC Panelboards  
 Disconnect Switches  
 200-Amp Automatic Transfer Switch  
 AC Panelboards  
 HVAC  
 Cables between AC, DC panels and protection panels  
 Marshalling Cabinets, including cable & connections  
 Fire Extinguisher, Table & Chair, Eyewash Fountain



# Protective Relay Panels and Systems

## For Wind Energy Applications



**CARTER & CRAWLEY, INC.** Quality electrical engineering and systems since 1967

Carter and Crawley provides state-of-the-art engineering, design, manufacturing and field service for the electrical applications of our global utility and industrial clients. From a single protective relay to the complexity of a walk-in power distribution center, we provide quality protection, control and communications solutions.

Carter and Crawley is certified to ISO 9001:2000 standards and is a division of the AZZ Electrical Products Group.

Carter and Crawley, Inc.  
1010 Thousand Oaks Boulevard  
Greenville, SC 29607  
864.288.6250

[www.cartercrawley.com](http://www.cartercrawley.com)  
[candcsales@azz.com](mailto:candcsales@azz.com)